Page 14, line 3, after "reservoir", delete "28", and add – 28a – ; line 4, after "reservoir", delete "28", and add, – 28a –; and line 20, after "distance", delete "D", and add – D' –.

Page 15, line 12, after "arrow", delete "F", and add – E –.

Page 16, line 1, after "distance", delete "D", and add – D' –; line 12, after "particulates", add – , shown at 28 – ; and line 13, after "arrow", delete "F" and add – E –.

Page 17, line 9, after "arrow", delete "B" , and add – D –; and line 10, after "distance", delete "D" and add –D' –.

Page 19, line 4, after "distance", delete "D" , and add – D' –; line 6, after "distance", delete "D, arow A,", and add – D' –; and line 10, after "distance", delete "D" and add – D" –.

In the Claims:

Elected Claims 1 through 12 are amended as set out in the enclosed Amendments to Claims - Per 37 CFR 1.121.

REMARKS

Claims 1 through 12 remain in the case after cancellation of the non-elected Claims 13 through 22, and after this Amendment.

Applicant notes the request in the Office Action for a recitation of the current status of all referenced non-provisional applications and has here amended the Specification to affirm that the parent application has been cancelled.

Applicant notes the refusal to enter prior patents as set out in but not supplied with the

Information Disclosure Statement. Applicant has reviewed the cited patents and believes that the present CIP application is clearly not anticipated by any of these patents, or be a reasonable combination thereof, and that the patents cited by the Examiner in the present Office Action are clearly better references than those set out in the Information Disclosure, and accordingly applicant does not believe the submission of these references would be useful to the case and has therefore not submitted same.

Applicant notes the objections to the Specification and has herein make the changes as kindly suggested by the Examiner, and has further amended the Specification to conform it to the Substitute Drawings submitted herewith, as discussed below.

Applicant responsive to the objection to the drawings has here submitted new Substitute Drawings for replacing the Original Drawings. Applicant believes, that Substitute Drawings in concert with the amendments here made to the Specification, correct the double use of the character "D" and the reference character "28 ". With the admission of the Substitute Drawings into the case, which applicant here requests, applicant believes that the Drawings Objections have been overcome.

Applicant notes the objection to Claims 1 - 12, citing formalities in Claims 1, 8 and 11. Applicant has here amended these claims as suggested by the Examiner and believes that, with these changes, the objections to the Claims have been overcome.

Applicant notes the rejections of the Claims of the case, Claims 1 through 12, citing 35 USC 103(a) as set out in paragraphs 5 through 18 of the Office Action. In paragraph 15, Claims 1 -6 and 8 - 10, are set out as being unpatentable over a combination of patents to McElroy et al. (USP 5,084,256) in view of Yoon (USP 4,504,269). McElroy is cited as having the features of the

invention as set out in Claim 1, including a duct having an inlet to pass a gas stream that empties into a particulate removal means, and includes a sorbent material injector with the duct of a length to encourage sorbent particulate mixing with the pollutants in the gas stream, calls for injecting water as a mist into the gas stream containing the mixed and compacted sorbent material and pollutant particles prior to the mixture's passage into the removal means ,but does not provide for counter current flow. Later in the Office Action, at paragraph 18, a patent to Woodroffe, et al (USP 4,922,840), at Fig. 3, is cited as showing a counter current flow of sorbent material is provided by injection nozzles 18. The Examiner admits that McElroy does not include a sensor means for measuring water content of the mixture prior to passing water into the mix, and, though vague, as set out at (C6L26-33), seems to use water injection for, cooling and humidifying the mixture to a typical water saturation point of 135 degrees F. It is therefore apparent that there is no continuing analysis of the water content of the gas stream and sorbent material mix that, in practice, can vary with the water content of the flue gas stream. The present invention precisely measures the water content of the mix at a "moisture sensor means" and, based upon that sensing, injects a needed amount of moisture, in the form of a mist, into the mixture to achieve "from eighteen to twenty percent of saturation". The Examiner indicates that it would be obvious to one of ordinary skill to provide a moisture sensor, though the McElroy et al patent seems only to rely on a typical temperature, and is certainly not precise in its water injection. Whereas, the present application calls for moisture sensing to inject a precise amount of water into the mix to obtain an optimum of from eighteen to twenty percent of saturation. An excellent summary of how the prior art must be considered to make a case of prima facie obviousness is contained In re Ehreich, 200 U.S.P.Q. 504,

509-11 (C.C.P.A.). There the court states that a reference must not be considered in a vacuum, but against the background of the other references of record. It is stated that the question of a 35 USC 103 case is what the reference(s) would "collectively suggest" to one of ordinary skill in the art. However, the court specifically cautioned that the Examiner must consider the entirety of the disclosures made by the references and avoid combining them indiscriminately.

In finding that the "subject matter as a whole" would not have been obvious in Ehrreich the court concluded:

> Thus, we are directed to no combination of prior art references which would have rendered the claimed subject matter as a whole obvious to one of ordinary skill in the art at the time the invention was made. The PTO has not shown the existence of all the claimed limitations in the prior art or a suggestion leading to their combination in the manner claimed by applicants.

To establish a case of prima facie obviousness by combining references, the prior art must provide some reason or motivation to make the claimed combination, In re Dillon, l6 U.S.P.Q. 2d 1897, 1901 (Fed. Cir. 1990) (en banc). As more recently and aptly stated In re Jones, 21 U.S.P.Q. 2d 1941, 1943-44 (Fed. Cir. 1992)

(Emphasis in original):

> Before the PTO may combine the disclosure of two or more prior art references in order to establish prima facie obviousness, there must be some suggestion for doing so, found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art .... Conspicuously missing from this record is any evidence, other than the PTO's speculation (if it be called evidence) that one of ordinary skill in the art would have been motivated to make the modifications of the prior art necessary to arrive at the claimed [invention].

Whereas, applicant's invention recognized that a close control of the percentage of saturation has a marked effect on pollutant removal efficiency, as set out in the enclosed Affidavit of the

inventor. The McElroy patent provides for water injection for temperature control to, apparently, an industry assumption. Certainly, McElroy does not imply a need for a close control of water content of the mix of sorbent materials and pollutants to an optimum eighteen to twenty percent of saturation as does the invention, and the Examiners analysis of what one of ordinary skill in the art would have recognized from the McElroy patent appears to be speculation, like the speculation set out the In re Jones case cited above.

As set out in applicant's affidavit, paragraphs 1 through 3, based on his experience, the applicant is knowledgeable as one having more than ordinary skill in the art who, being very familiar with the industry, realized that there was not a sufficiently efficient pollutant removal system available, and set out to create one. In which creation, he determined, as set out in paragraphs 4 through 6 of his affidavit, that moisture control of the mix of sorbent materials with the exhaust gas flow was needed to provide and set about to implement that analysis as explained in paragraphs 7 through 10 of his Affidavit. From which efforts the present invention was derived, as set out in paragraphs 11 and 12. Which invention, as set out in applicant's affidavit produced significant improvements in pollutant removal efficiency over earlier systems, with the achieved improvements in particulate removal being very unexpected at the time of the invention.

Where the Examiner cites the application as being "silent to unexpected results". Applicant while disputing this analysis and contending that the application fully, and in detail, describes the interaction of the components of the invention, has provided the applicants affidavit the sets out and supports both the inventive efforts that produced the invention and that a practice of the invention produced "unexpected results".

With the corrections to the drawings, specification and claims, applicant believes that Claim 1, as amended should be in proper condition for allowance as should the Claims dependent thereon remaining in the case, Claims 2 through 12, and respectfully requests same.

Respectfully submitted,

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MRR/rr
Docket No. 7455CIP
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